

A REVISED LIST OF THE FISHES OF OHIO.*

RAYMOND C. OSBURN, EDWARD L. WICKLIFF
AND MILTON B. TRAUTMAN.

Nearly thirty years have elapsed since a list of Ohio fishes was issued. (The Fishes of Ohio, Osburn, Special Paper No. 4, Ohio Academy of Science, June 1901). In this report 134 native and 3 introduced species were listed from actual records of fishes taken within the limits of the state.

For a number of years after this time very little work was done on the fishes, but in 1920 systematic collecting was again undertaken by the senior author, assisted by Mr. Wickliff and others in a survey of lakes and streams for the State Division of Fish and Game. Since that time some collecting has been done every summer in connection with biological studies of the waters of the state. This work, initiated and supervised by Osburn, has been carried on chiefly by Wickliff and Trautman, though a number of others have contributed to a lesser extent. The State Division of Fish and Game (now the Division of Conservation) has financed the work, with the exception of that carried on in Lake Erie every summer by the Franz Theodore Stone Biological Laboratory of the Ohio State University.

The list now numbers, as presented here, 144 native and 4 introduced species and 9 of these are represented within the limits of the state by additional subspecies, making a total list of 157 more or less distinct kinds of fishes in Ohio. Several names have been dropped from Osburn's list for the following reasons: *Ameiurus vulgaris* Thompson is an occasional long-jawed variant of *A. melas* and *A. nebulosus*; *Carpiodes thompsoni* Agassiz is synonymous with *C. velifer*; *Opsopoeodus megalops* Forbes is synonymous with *O. emiliae*; *Eupomotis euryorus* McKay is a hybrid between *E. gibbosus* and *Apomotis cyanellus*, and the introduced tench (*Tinca*) has disappeared from our waters.

*Contribution No. 102 from the Department of Zoology and Entomology, the Ohio State University.

The increase in the list is accounted for in two ways: First, more extensive collecting has added *Petromyzon marinus*, *Clinostomus vandoisulus*, *Notropis anogenus*, *Notropis dorsalis*, *Phenacobius mirabilis*, *Schilbeodes nocturnus*, *S. furiosus*, *Microperca punctulata*, and *Cottus ricei*. Second, more careful taxonomic study, especially by Dr. C. L. Hubbs of the University of Michigan Museum, has resulted in the separation of former species into two or more. Thus a new black bass, *Micropterus pseudaplites* has been separated from the Smallmouth; the river chub (*Hybopsis kentuckiensis*) has been split into three species, two of which occur in the state; the suckers of the genus *Moxostoma* have been restudied and we now have six species instead of three, etc.

The nomenclature has undergone much revision during the past few years and many of the names now in use are recognizable only to the taxonomist. It is hardly possible that such a tangled synonymy is even yet straightened out. In the following list the authors have followed closely the work of Dr. Hubbs who has checked many of our determinations of the species. Where changes have been made in the list here presented, those of Osburn's "Fishes of Ohio" appear in parenthesis.

Except for additions to the list no occurrence records are noted, for the reason that it is proposed to issue a complete report in which will be brought together our extensive data on distribution, ecology, food, breeding and other phases of ichthyological investigation.

LIST OF THE 159 SPECIES AND SUBSPECIES KNOWN TO OCCUR IN OHIO.

Family PETROMYZONIDÆ. Lampreys.

Petromyzon marinus L. Lake Erie, near West Sister Island, Nov. 14, 1927, collected by W. M. Tidd. This lamprey has been reported for Lake Erie, but not in Ohio waters.

Ichthyomyzon concolor (Kirtland).

Lampetra lamotteni (LeSueur). (*L. wilderi* Gage).

Family ACIPENSERIDÆ. Sturgeons.

Acipenser fulvescens (Rafinesque). (*A. rubicundus* LeSueur).

Scaphirhynchus platyrhynchus (Rafinesque).

Family POLYDONTIDÆ. Paddlefishes.

Polyodon spathula (Walbaum).

Family LEPISOSTEIDÆ. Gar pikes.

Lepisosteus osseus (L)*Lepisosteus platostomus* (Rafinesque).*Lepisosteus tristoechus* Bloch and Schneider.

Family AMIIDÆ. Bowfins.

Amia calva L.

Family HIODONTIDÆ. Mooneyes.

Hiodon tergisus LeSueur.*Amphiodon* (*Hiodon*) *alosoides* Rafinesque.

Family CLUPEIDÆ. Herrings.

Pomolobus chrysochloris Rafinesque.

Family DOROSOMIDÆ. Gizzard shads.

Dorosoma cepedianum (LeSueur).

Family SALMONIDÆ. Salmon and Trouts.

Salmo fario L. Brown Trout. Introduced and established in Castalia Creek.*Salmo irideus* Gibbons. Rainbow trout. Introduced into Castalia Creek, Lake Erie drainage and head waters of Mad River, Ohio drainage. Adults, probably escaped, have been taken at a number of places in the west end of Lake Erie and in the Huron River near the lake.*Cristivomer namaycush* (Walbaum).*Salvelinus fontinalis fontinalis* (Mitchill).

Family COREGONIDÆ. Whitefishes.

Coregonus clupeaformis (Mitchill).*Leucichthys artedi artedi* (LeSueur). (*Argyrosomus artedi*).*Leucichthys artedi albus* (LeSueur). (*Argyrosomus tullibee* Richardson).

Family CATASTOMIDÆ. Suckers.

Megastomatobus (*Ictiobus*) *cyprinella* (Cuvier and Valenciennes).*Ictiobus niger* (Rafinesque). (*I. urus* Agassiz).*Ictiobus bubalus* (Rafinesque).*Carpiodes carpio* (Rafinesque).*Carpiodes velifer* (Rafinesque). (*C. difformis* Cope).*Carpiodes cyprinus* (LeSueur). (*C. velifer* Rafinesque and *C. thompsoni* Agassiz).*Cycleptus elongatus* (LeSueur).*Catostomus commersonnii commersonnii* (Lacepede).*Catostomus catostomus* (Forster). Jordan's Ohio Report states that this fish is "quite abundant in Lake Erie," but we have not seen it nor have other collectors noted its presence. Was the record an error or has the fish disappeared from Lake Erie?

- Hypentelium (Catostomus) nigricans* (LeSueur).
Erimyzon sucetta kennebecensis (Girard). (*E. sucetta oblongus* Mitchill, part).
 The typical sweet sucker of the lakes.
Erimyzon oblongus claviformis (Girard). (*E. sucetta oblongus*, part.)
 The common stream form.
Minytrema melanops (Rafinesque).
Moxostoma rubriques Hubbs. Represented in our collections by one specimen from the Ohio River drainage, a paratype deposited in the Museum of the University of Michigan.
Moxostoma erythrurum (Rafinesque). (*M. aureolum* LeSueur, part).
 The commonest of the "redhorse" suckers, in most of the creeks and rivers of both drainages and occasionally in lakes.
Moxostoma aureolum (LeSueur). (*M. breviceps* Cope). The common short-headed sucker of Lake Erie.
Moxostoma breviceps (Cope). (*M. aureolum* part. Not the *M. breviceps* of Osburn's list). A short-headed sucker of the Ohio River drainage only.
Moxostoma duquesnii (LeSueur). (*M. aureolum*, part. Not the *Placopharynx duquesnii* of Osburn's list). Well distributed over the state but not commonly taken.
Moxostoma anisurum (Rafinesque).
Placopharynx carinatus Cope. (*P. duquesnii* LeSueur).
Lagochila lacera Jordan and Brayton.

Family CYPRINIDÆ. Minnows.

- Cyprinus carpio* L. Carp. Introduced everywhere.
Carassius auratus (L.). Goldfish. Introduced and very abundant in Lake Erie, inland lakes and larger streams.
Nocomis biguttatus (Kirtland). (*Hybopsis kentuckiensis* Raf., part).
 Especially in Northern Ohio on weedy ripples.
Nocomis micropogon (Cope). (*Hybopsis kentuckiensis*, Raf., part). All over the state, but does not frequent weedy places.
Erimystax (Hybopsis) dissimilis (Kirtland).
Extrarius (Hybopsis) hyostomus (Gilbert).
Hybopsis storerianus (Kirtland).
Hybopsis amblops (Rafinesque).
Rhinichthys atronasmus meleagris Agassiz. (*R. atronasmus* Mitchill, part).
Rhinichthys atronasmus obtusus Agassiz. (*R. atronasmus* Mitchill, part).
Rhinichthys cataractæ (Cuvier and Valenciennes).
Semotilus atromaculatus atromaculatus (Mitchill).
Clinostomus vandoisulus (Cuvier and Valenciennes). Churn Creek, Adams County, April 20, 1929, and Lapparell Creek, Pike County, July 28, 1929, both records by Trautman. The latter is the most northerly record known.
Clinostomus (Leuciscus) elongatus (Kirtland).
Opsopoeodus emiliae Hay. (Includes *O. megalops* Forbes).
Notropis heterodon (Cope).
Notropis anogenus Forbes. First taken in Ohio by C. Rutter at Port Clinton and Lakeside, 1898. Rediscovered by Osburn in Catawba Island "harbors" in 1929, though a specimen taken by Trautman

in Lake Erie at Port Clinton in 1927 has been found in a collection at the Ohio State Museum. The species is apparently limited to the shallow weedy waters adjacent to Lake Erie.

Notropis atrocaudalis heterolepis Eigenmann and Eigenmann (*N. cayuga*, part).

Notropis atrocaudalis atrocaudalis Evermann (*N. cayuga*, part).

Notropis volucellus volucellus (Cope). (Includes also some of Osburn's *N. blennius*). It is the common variety over the state.

Notropis volucellus buehneri Meek. Larger streams of the extreme southern part of the state.

Notropis deliciosus missouriensis (Cope). (*N. blennius*, part). This variety has a more westward distribution but enters Ohio through the Maumee system into the western end of Lake Erie and also occurs in south-western Ohio, in more or less typical form.

Notropis deliciosus stramineus (Cope). (*N. blennius*, part). General throughout the state, but most typical in the eastern and north-eastern portions.

Notropis boops Gilbert. (*N. shumardi* Girard).

Notropis dorsalis dorsalis (Agassiz). First taken by Wickliff in Black River, Loraine County, August 7, 1922. Later records by Trautman, Hine and Walker in Cuyahoga, Medina and Summit counties.

Notropis blennius (Girard). (*N. jejunus* Forbes).

Notropis hudsonius hudsonius (Clinton).

Notropis whipplii spilopterus (Cope). (*N. whipplii* Girard).

Notropis ariommus (Cope).

Notropis atherinoides Rafinesque.

Notropis photogenis (Cope). (*N. arge* Cope).

Notropis rubellus (Agassiz). (*N. rubrifrons* Cope).

Notropis cornutus chrysocephalus (Rafinesque). The dominant subspecies, found practically over the whole state.

Notropis cornutus frontalis (Agassiz). Only in the coldest, most northerly situations in the state, especially the small, cold, hill streams of eastern and north-eastern Ohio.

Notropis umbratilis cyanocephalus (Copeland). (*N. u. lythrurus* Jordan, part). The only "redfin" found in the lake drainage. It also occurs in the northern part of the Ohio River drainage.

Notropis lythrurus (Jordan). (*N. u. lythrurus*, part). This species occurs in the south western part of the state. In previous reports it was confused with the preceding.

Ericymba buccata (Cope).

Phenacobius mirabilis (Girard). First taken by Osburn and Wickliff at Lake St. Marys, July 26, and in Big Walnut Creek, September 9, 1920. Later Wickliff and Trautman have found it not uncommon in the western half of the state, especially in the Scioto and Maumee systems.

Exoglossops laurae Hubbs (MSS.) (*Exoglossum maxillingua* LeSueur). This species, first recorded in Osburn's report has been separated from *Exoglossum* and made a new genus and species by Hubbs. It has been taken again near the place where Osburn found it.

Notemigonus (Abramis) crysoleucas crysoleucas (Mitchill).

Hybognathus nuchalis Agassiz.
Chrosomus erythrogaster erythrogaster Rafinesque.
Hyborhynchus (Pimephales) notatus (Rafinesque).
Pimephales promelas Rafinesque.
Hypargyrus velox Girard. (*Chiola vigilax* Baird and Girard).
Campostoma anomalum (Rafinesque).

Family AMEIURIDÆ. Catfishes.

Ictalurus furcatus (LeSueur).
Ictalurus punctatus (Rafinesque).
Villarius (Ameiurus) lacustris (Walbaum).
Ameiurus melas melas (Rafinesque).
Ameiurus nebulosus (LeSueur).
Ameiurus natalis (LeSueur).
Pelodictis limosus Rafinesque. (*Leptops olivaris* Rafinesque).
Noturus flavus Rafinesque.
Schilbeodes gyrinus (Mitchill).
Schilbeodes nocturnus (Jordan and Gilbert). Recorded from a single specimen taken by Wickliff in Ottawa County, near the mouth of the Portage River, June 27, 1929. This is the first record of the species from the Great Lakes drainage.
Schilbeodes furiosus (Jordan and Jenkins). Taken by Trautman, July 3, 1927, in Shade Creek, Meigs County, and in the lower reaches of the Scioto and Muskingum rivers in 1929. Formerly known only from the Neuse, Tar and Little rivers of North Carolina, the species has also recently been noted for Indiana and Michigan by Hubbs.
Schilbeodes miurus (Jordan).
Schilbeodes eleutherus (Jordan).

Family UMBRIDÆ. Mud Minnows.

Umbra limi (Kirtland).

Family ESOCIDÆ. Pikes.

Esox (Lucius) vermiculatus LeSueur.
Esox (Lucius) lucius L.
Esox (Lucius) masquinongy masquinongy (Mitchill). (Part, L. Erie drainage).
Esox (Lucius) masquinongy ohiensis Kirtland. (Part, Ohio River drainage).

Family ANGUILLIDÆ. Eels.

Anguilla bostoniensis (LeSueur). (*A. chrysypa* Rafinesque).

Family CYPRINODONTIDÆ. Killifishes.

Fundulus diaphanus menona (Jordan and Copeland).
Fundulus dispar (Agassiz).
Fundulus notatus (Rafinesque).

Family PERCOPSIDÆ. Trout Perches.

Percopsis omiscomaycus (Walbaum). (*P. guttatus* Agassiz).

Family APHREDODERIDÆ. Pirate Perches.

Aphredoderus sayanus (Gilliams).

Family MORONIDÆ. White Basses.

Lepibema (Roccus) chrysops (Rafinesque).

Family PERCIDÆ. Perches.

Perca flavescens (Mitchill).

Stizostedion canadense canadense (Smith). (*S. c. griseum* DeKay).

Stizostedion vitreum (Mitchill). (*S. vitreum*, part).

Stizostedion glaucum Hubbs. (*S. vitreum*, part). The blue pike-perch of Lake Erie, especially in the eastern part of the lake.

Family ETHEOSTOMIDÆ. Darters.

Hadropterus evides (Jordan and Copeland).

Hadropterus maculatus (Girard). (*H. aspro* Cope and Jordan).

Hadropterus phoxocephalus (Nelson).

Hadropterus scierus Swain.

Percina caprodes caprodes (Rafinesque).

Percina caprodes semifasciata (DeKay) (*P. c. zebra* Agassiz). In the most typical form only in Lake Erie.

Cottogaster copelandi (Jordan).

Imostoma (Cottogaster) shumardi (Girard).

Ammocrypta pellucida (Baird).

Crystallaria asprella (Jordan).

Boleosoma nigrum nigrum (Rafinesque).

Peocilichthys (Etheostoma) variatus Kirtland.

Peocilichthys (Etheostoma) camurus Cope.

Peocilichthys (Etheostoma) zonalis Cope.

Peocilichthys (Etheostoma) coeruleus (Storer).

Peocilichthys spectabilis (Agassiz). (*Etheostoma coeruleus spectabile*).

Peocilichthys (Etheostoma) tippecanoe Jordan and Evermann.

Peocilichthys exilis (Girard). (*Boleichthys fusiformis* Girard).

Catonotus (Etheostoma) flabellaris flabellaris (Rafinesque).

Microperca punctulata Putnam. First taken by Wickliff and Osburn in Turkeyfoot Lake, August 7, 1920; and later by Trautman in Blue Creek, Erie County and Nettle Lake, Williams County.

Etheostoma (Diplesion) blennioides Rafinesque.

Family CENTRARCHIDÆ. Black Basses and Sunfishes.

Micropterus dolomieu Lacepede. (Part).

Micropterus pseudaplites Hubbs. This recently described species, the "Kentucky Black Bass," separated from the preceding, is found to be the dominant Bass of the rivers of extreme southern Ohio, taken in about 18 counties, where it prefers the quieter waters.

Aplites (Micropterus) salmoides (Lacepede).

Chaenobryttus gulosus (Cuvier and Valenciennes).

Apomotis cyanellus (Rafinesque).

Helioperca incisor (Cuvier and Valenciennes). (*Lepomis pallidus* Mitchill).

Xenotis (Lepomis) megalotis megalotis (Rafinesque Part).

Xenotis (Lepomis) megalotis peltastes (Cope). This subspecies occurs in the lake drainage of Ohio.

Allotis (Lepomis) humilis (Girard).

Eupomotis heros (Baird and Girard).

Eupomotis gibbosus (L.).

Ambloplites rupestris (Rafinesque).

Pomoxis annularis (Rafinesque).

Pomoxis sparoides (Lacepede).

Family ATHERINIDÆ. Silversides.

Labidesthes sicculus Cope.

Family SCIAENIDÆ. Croakers, Drumfishes.

Aplodinotus grunniens Rafinesque.

Family COTTIDÆ. Sculpins.

Cottus bairdii bairdii Girard. (*C. ictalops* Rafinesque).

Cottus ricei Nelson. A single specimen by Wickliff and Tidd in Lake Erie, near Kelley's Island, November 7, 1928. It is common farther east in the deeper waters of the lake.

Family GASTEROSTEIDÆ. Sticklebacks.

Eucalia inconstans (Kirtland).

Family GADIDÆ. Codfishes.

Lota maculosa (LeSueur).